

AN IMPROVED ASEPTIC TREPHINE.

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MY purpose in introducing this instrument to the profession is not to improve upon the trephine of Galt, now in common use, but to provide a safe method of using it with greater rapidity and equal precision. The improvement is, therefore, in the mechanical method of applying the power.

The accompanying cut (Fig. 1) illustrates the instrument ready for use. It consists of a fixed handle, in which revolves a shaft to which the force is applied through a double-raised spiral by means of a sliding handle. The trephine is attached to this



FIG. 1.—The improved trephine ready for use.

by a simple device and rotates with it. Each upward movement of the sliding handle causes the shaft and the attached trephine to make three complete revolutions; while the upward motion by lessening rather than increasing the pressure, and consequent friction of the cutting edge, prevents jamming and makes cutting easy and sure. This improvement, in the application of the power and the rapidity of cutting, will be more easily realized when it is considered that one motion of the hand with the old model produced but one-half of a revolution, while by this method three complete revolutions are made in the same amount of time and with less effort.

By a simple mechanism contained in the sliding handle, the downward or return motion does not rotate the trephine in the reverse direction, and is accomplished rapidly and without effort. The pressure applied to the skull is entirely controlled by the hand grasping the upper or fixed handle, and by a slight deviation from the perpendicular the instrument can be made to cut at any desired point.

The mechanism and aseptic possibilities of the instrument can be more easily understood by reference to the accompanying cut (Fig. 2). The shaft (A) has a double spiral traversing the greater part of its length. At the upper end is a double bearing, which fits into the fixed handle (B), and is held in place by a nut (C). A ferrule (D) protects the fingers. To attach the handle to the shaft, the ferrule (D) is first placed on the shaft, over this

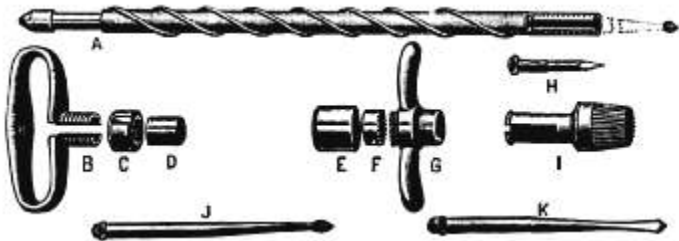


FIG. 2.—Showing separate parts of the improved trephine.

the nut (C), then the pointed bearing is inserted into the handle, the other bearing sprung into place, and the nut lightly screwed on.

The sliding handle consists of three parts, a cap (E), a toothed cam (F), and the handle (G) having reversed teeth. After cleansing, care should be taken to place the parts together as indicated in the cut. The cap should be next to the fixed handle (B), the cam should have its teeth downward, while the handle (G) should be placed so that its teeth interlock with those of the cam; or the parts may be fixed together, in the same position, and then slipped over the shaft.

At the lower end of the shaft is a groove in which is inserted the trephine-pin (H), the trephine (I) is slipped over this, and is

held in place by the thumb-screw of the pin, which thus serves its usual purpose, and also acts as a thumb-screw and nut to bind the trephine to the shaft. In a similar manner drills or burrs are attached to the shaft, the thumb-screw preventing their rotation and holding them in place.

The simplicity of the mechanism makes it wellnigh impossible for the instrument to get out of order, while the aseptic construction and easy separation facilitate cleansing. In using the trephine, the pin should remain down until a considerable depth has been reached; this will prevent the trephine from slipping, as it is liable to do in the hands of a novice, when it first begins to cut. In no case is great force required, as the trephine, depending for its cutting power on the rapidity of its revolution, cuts most rapidly when lightly applied. It should also be borne in mind that it cuts much more rapidly than the ordinary trephine, and the depth of the cut should be more frequently ascertained.

The instrument is portable, weighs about fifteen ounces, and may be obtained, with crowns, drills, and burrs, of any size or in any number, of the manufacturers in Philadelphia.